This report is required by law (7 USX 2143). Failure to report according to the regulations can result in order to cease and desist and to be sub act to penalties as revived for in Section 21!

See attached form for additional information.

Interagency Report Control No.:

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

1. CERTIFICATE NUMBER: 93-R-0440

CUSTOMER NUMBER: 9199

FORM APPROVED
OMB NO. 0579-0036

ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

University Of California, San Francisco
UCSF Box 0547
San Francisco, CA 94143-0547
Telephone: (415) 476-5869

3. REPORTING FACILITY (List all locations where animals were housed or used in actual research, testing or experimentation, or held for these purposes. Attach additional sheets if necessary)

FACILITY LOCATIONS (Sites) - See Attached Listing

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY **(Attach additional sheets if necessary or use APHIS Form 7023A 1**

A. Animals Covered By The Animal Welfare Regulations	B. Number of animal being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use o pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals an for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery or tests were conducted involving accompanying pain or distress to the animals and for whom the use of appropriate anesthetic, analgesic, or tranquilize drugs would have adversely affected the procedures, res or interpretation of the teaching, research, experiments, surgery, or tests. (An explanation of the procedures producing pain or distress in these animals and the reas(hsuch drugs were not used must be attached to this repor	F. TOTAL NUMBER OF ANIMALS (COLUMNS C + D + E)
4. Dogs		2	43		45
5. Cats	19	10	59		88
6. Guinea Pigs			32		32
7. Hamsters			336		336
8. Rabbits		21	110	118	249
9.Non-human Primates	16	17	63	1	97
10. Sheep		14	79		93
11. Pigs		2	116		118
12.Other Farm Animals					
13. Other Animals					

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2) Each principal investigator has considered alternatives to painful procedures.

3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and appropriate Institutional Animal Care and Use Committee (IACUC). A summary of all such exceptions is attached to this annual report. In addition to identifying the IACUC-approved exceptions, this summary in(brief explanation of the exceptions, as well as the species and number of animals affected.

4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL
(Chief Executive Officer or Legally Responsible Institutional Official)

SIGNATURE OF C.E.O. OR INSTITUTIONAL OFFICIAL	NAME & TITLE OF C.E.O. OR INSTITUTIONAL OFFICIAL (Type or Print)	DATE SIGNED
(b)(6),(b)(7)(c)	(b)(6),(b)(7)(c)	11-30-06

(Replaces VS FORM 18-23 (OCT 88), which is obsolete.)

ATTACHMENT to APHIS FORM 7023 (93-R-0440)

Column E:

The University of California at San Francisco is committed to using laboratory animals in such a way as to minimize pain or discomfort. The Committee reviews each project and many protocols have been redesigned to meet this goal. Attached are the explanations of the procedures producing pain or distress in the animals covered by Subchapter A - Animal Welfare and reported in column E during the period 10/1/05 through 9/30/06 and the reasons anesthetic, analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretations of the research. Separate Optional Column E form (1) is attached. ATTACHMENT to APHIS FORM 7023, Federal Fiscal Year 2005/2006 (93-R-0440).

Column E Explanation

This form is intended as an aid to completing the Column E explanation. It is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A Column E explanation must be written so as to be understood by lay persons as well as scientists.

1. Registration Number: 93-R-0440.

2. Number of animals used in this study.

1

3. Species (common name) of animals used in the study:

Squirrel Monkey

4. Explain the procedure producing pain and/or distress.

Three times during the reporting period, one animal on this study lost >10% of body weight relative to an assigned "baseline weight" established as a benchmark. The animal was reported to the veterinarian and examined, with no evidence of ill health found. Each time, body weight came back up with supplemental fluid administration. To be conservative in our reporting we retrospectively reclassify the animal in Column E.

5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 6 below).

NA - Retrospective reclassification in Column E. Animal was provided supplemental fluid per protocol and per consult with a veterinarian and quickly regained lost weight.

6. What, if any, Federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) title number and the specific section number (e.g., APHIS, 9 CFR 113.102):

NA

Column E Explanation

This form is intended as an aid to completing the Column E explanation. It is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A Column E explanation must be written so as to be understood by lay persons as well as scientists.

1. Registration Number: 93-R-0440

2. Number of animals used in this study

118

3. Species (common name) of animals used in the study:

New Zealand White Rabbit

4. Explain the procedure producing pain and/or distress.

Endocarditis is a lethal, bacterial infection of the heart valve. The rabbit model of endocarditis is a faithful reproduction of the disease as it occurs in humans. The specific purpose of these experiments is to define the basis of pathogenesis and interactions between bacteria of the types that cause heart valve infections with the host and host cells, such as platelets, blood cells recruited to sites of injury, endothelial cells, and other host tissues.

Our experimental goals were to establish a reproducible and tractable (i.e., not lethal) infection model while minimizing the risk of unrelieved distress and suffering to the animals. The experimental infection we have relied on is an experimental model of aortic valve endocarditis (AVE), in which a catheter is positioned inside of the heart across the aortic valve and the valve is subsequently infected by injecting the bacterial strain being studied.

5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 6 below).

(Anesthetics are given during the procedure and analgesics are given post operatively. It is debatable whether any of these rabbits actually experienced pain or distress as in humans the studied condition is not reported as painful. Nevertheless, we voluntarily report these in Column E.)

This is an infection model that produces few, if any, early indicators of distress or discomfort that can be used to guide interventions to relieve either condition, assuming that these even occur, because in humans at least the pre-terminal stages of infection are accompanied by CNS depression that would alter perception of distress or discomfort. The rapidity with which the infection may advance in some animals also defies detection of distress or discomfort. Other than administration of fluids, interventions short of euthanasia (e.g., administration of antibiotics or analgesia) would invalidate the model by treating the condition that is under study, alter the pathophysiology or host response, or hasten death. While deaths are not unexpected in this infection model, they cannot always be predicted in the individual animal. Monitoring parameters such as fever do not accurately predict outcome. Approximately 20% of animals survive with no apparent ill effects other than fever and modest weight loss. About half of the rabbits manifest

sufficient weight loss, are moribund or otherwise unable to access food and water and are euthanitized. Up to a quarter of rabbits die. Due to the inability to predict death in individual animals, all animals are potentially at risk for unrelieved distress and death. Accordingly, all infected animals have been classified as category E.

6. What, if any, Federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) title number and the specific section number (e.g., APHIS, 9 CFR 113.102):

NA

UCSF REPORTABLE IACUC-APPROVED EXCEPTIONS

Species and Numbers:
Monkey, Cynomolgus or Rhesus Macaque – 16

Reportable Exceptions – Fluid Regulation – Section 3.83
Fluids are regulated in our animals to motivate them to perform the behavioral task that allows us to investigate questions of how brain circuits generate behavior.

Please note that even these reported animals rarely, if ever, experience a situation where they are not provided potable water twice per day per AWA regulations. We voluntarily report this exception to be conservative in our reporting.

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Species and Numbers:
Monkey, Cynomolgus or Rhesus Macaque – 4

Reportable Exceptions – Fluid Regulation – Section 3.83
The goal of our research is to understand the operation of the working brain. One commonly accepted way to do this is to record the behavior of animals and the activity of single neurons during behavior. In our laboratory, and many others around the world, we accomplish this goal by training monkeys to perform simple tasks with fluid or food reinforcements. Eliciting good behavioral performance over a period long enough to acquire meaningful data requires strong motivation on the part of the animal. A successful, humane, and scientifically valid way to attain this level of motivation is through fluid or food reward.

Please note that even these reported animals rarely, if ever, experience a situation where they are not provided potable water twice per day per AWA regulations. We voluntarily report this exception to be conservative in our reporting.

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Species and Numbers:
Monkey, Squirrel Monkey - 2

Reportable Exceptions – Fluid Regulation – Section 3.83
Fluid regulation to elicit specific desired behavior is an absolute requirement for the behavioral training described for this protocol. During training, a monkey will receive liquids only during and following a behavioral session. The animal will be given additional water and/or fruit when returned to its home cage at the end of each training session in an amount adjusted to maintain its weight at an IACUC approved average or level of its normative weight. Modified for the work with squirrel monkeys (New World monkeys), this study will follow the general principles for this type of study and IACUC approved protocol requirements.

Please note that even these reported animals rarely, if ever, experience a situation where they are not provided potable water twice per day per AWA regulations. We voluntarily report this exception to be conservative in our reporting.

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Species and Numbers
New Zealand White Rabbits – 5-15
Cynomolgus and Rhesus Macaque Monkeys – 20-30
Squirrel Monkeys – 8-12

Reportable Exceptions – Innovative Housing – Sections 3.56 and 3.84
In order to provide certain rabbits and nonhuman primates with enhanced physical environments, members of these species are occasionally placed into large "play cages" or "activity modules".

Typically rabbits or nonhuman primates are rotated through such cages. The number of such animals varies, but is approximately 20-30 NPH and 5 -25 rabbits over any particular year. The hard surfaces of the play cages or activity modules are spot cleaned and all excreta or disease hazards removed between individuals. These enclosures are sanitized on a normal schedule. Because many of the NHP are paired housed, they constitute a single group of animals for health status. The rabbits are from an SPF vendor. The rotations are often enough that full sanitation between individuals would require frequent dismantling of exercise cages and pens for sanitization and decrease the amount of time it is available for animal use. Individual animals would receive much less opportunity for experiencing this enhanced caging. Clearly the result would decrease this institution's efforts and ability to invoke a creative and positive animal housing experience. Effectively, this is innovative housing approved by the IACUC.

Therefore, this institution reports that as it relates to sanitation between individuals, it varies from Sections 3.56 and 3.84 as they apply to rabbit play cages and NHP activity modules.

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Species and Numbers
All non-rodent mammals

Reportable Exceptions – Surgery Facilities – Section 2.31.ix
Justification for the use of a laboratory major survival surgery area

A neurophysiology laboratory, where we conduct experiments on animals involves electrical recordings from brain cells, optical imaging, or injection of anatomical tracers. Discoveries made in our laboratory have led to improved treatments for blind children. Our research requires that animals survive after complex experiments that last up to 36 hours. Because the experiments involve a craniotomy or burr hole, they have been defined as "major survival surgery". Accordingly, the laboratory room was constructed in adherence with standards for a major survival surgery area. It has an independent HVAC system, an impervious epoxy floor, all steel furniture, a solid ceiling, overhead operating lights, etc.

To conduct major survival experiments on anesthetized animals, we need the neurophysiology equipment currently located in the room. This includes computer workstations, CRT monitors, a tangent screen with light projector, an optical bench, oscilloscopes, amplifiers, loudspeakers, lesion makers, window discriminators, pipette pullers, transformers, electrode advancers, stimulators, microscopes, an electronics workstation, etc. We also need instruments, tools, wiring, and electronic accessories required to make this equipment function properly. The equipment gives the room a more crowded appearance than a typical operating room. However, the key point is that the room is not being used simply to perform major survival surgery. Rather, the room is being used to conduct neurophysiological experiments, following procedures that have been duly approved by the UCSF IACUC and the Institute for Scientific Review at the NIH. This cannot be done in a surgical facility without the above-mentioned neurophysiology equipment.

Therefore, this institution reports that as it relates to major operative procedures, the IACUC has reviewed a request to use this area for surgery and determined it was well justified and approved the area (See 2.38(k)).